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# DETECTION OF *SALMONELLA* INFECTION IN CHICKENS BY AN INDIRECT ENZYME-LINKED IMMUNO SORBENT ASSAY BASED ON PRESENCE OF PAGC ANTIBODIES IN SERA

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**The outcomes of infection of humans and animals with *Salmonella* range from a persistent asymptomatic carrier state to temporal mild gastroenteritis or severe systemic infection. A rapid and accurate diagnostic test would help formulate strategies for effective prevention of their infections in the animal population. Current sequencing data predicts that the outer membrane protein PagC, is present in all common *Salmonella* serovars with sequence similarities of more than 98%. When found in other bacterial species, PagC sequences show <65% similarity at the amino acid level to those of *Salmonella PagC*. We hypothesized that *PagC* could be immunogenic and detection of antibodies to this protein could be an accurate indicator of *Salmonella* infection. The *pagC* gene from *Salmonella* enterica serovar Typhimurium CVCC542 was expressed in E. coli. The purified recombinant *PagC* protein was immobilized in microtiter plate wells. Sera from Specific-Pathogen Free (SPF) chickens which were infected with *Salmonella* or other non-*Salmonella* pathogens by injection were added and binding of *PagC* protein was detected by HRP-labeled goat anti-chicken antibody. Sera from *Salmonella*-infected chickens showed high specificity in contrast to the sera from chickens infected with other bacteria. When 87 *Salmonella* antibody positive sera from S. *pullorum* orally infected SFP chicken and 93 negative sera from uninfected SPF chicken were tested, 98.3% agreement was detected. The rPagC-ELISA and agglutination had 80.6% agreement in detecting 252 clinical chicken sera samples. These results suggest that PagC antibody-based indirect ELISA can serve as a convenient and novel method for the diagnosis of *Salmonella* infection.**

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